

SUPPORT FOR THE AMENDMENT

Support for claim 8 is found on page 7, lines 7-8 of the specification. Support for claims 9-11 is found on page 7, lines 12-19 of the specification. Support for claim 12 is found on page 7, lines 8-10 of the specification. Support for claim 13 is found on page 8, lines 4-5 of the specification. No new matter would be added to this application by entry of this amendment.

Upon entry of this amendment, claims 1-13 will now be active in this application.

REQUEST FOR RECONSIDERATION

The claimed invention is directed to a modified diene- α -olefin copolymer and a method for producing same.

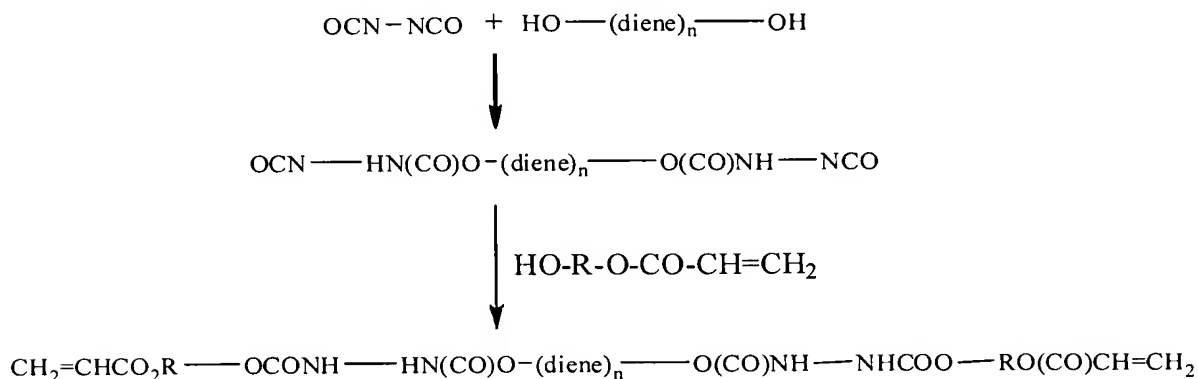
Non-polar polyolefin and rubber components can be difficult to adhere to polar polymers. Modification with a polar compound may provide a polymer with high industrial value. However, durability of such modified polymers has not always been satisfactory. Accordingly, modified diene polymers are sought.

The claimed invention addresses this problem by providing a modified diene- α -olefin copolymer wherein terminal hydroxyl groups are modified with unsaturated carboxylic acids ($\text{H}_2\text{C}=\text{C}(\text{R}^5)\text{-CO}_2\text{-}$) providing polymerizable unsaturated carboxylic ester groups on the copolymer. Such a copolymer has been found to have good compatibility and adhesiveness. Such a copolymer is nowhere disclosed or suggested in the cited reference of record.

The rejection of claims 1-7 under 35 U.S.C. § 102(b) over Selley, U.S. 4,041,104 is respectfully traversed.

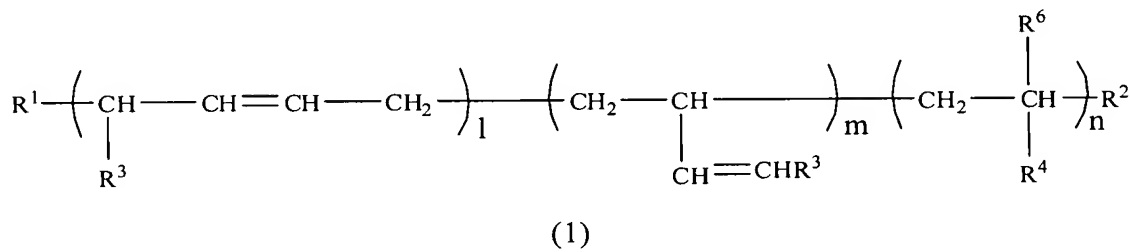
Selley fails to disclose or suggest a modified copolymer having unsaturated carboxylic ester groups ($\text{H}_2\text{C}=\text{C}(\text{R}^5)\text{-CO}_2\text{-}$) in at least a part of the ends.

Selley describes a high impact corrosion resistant polymer obtained by **reacting** a molar **excess** of organic diisocyanate with a hydroxyl terminated polydiene and subsequently reacting the product thereof with a hydroxy alkyl acrylate (see Abstract).



Accordingly, in a first step, hydroxy-terminated diene is reacted with a **molar excess** of diisocyanate (col. 2, lines 20-23), such that a urethane bond is formed between the diisocyanate and the hydroxy groups of the hydroxy terminated diene. Thereafter, the hydroxyl group of a hydroxy alkyl acrylate is reacted with an isocyanate group, providing a urethane linkage between the polydiene and the hydroxyalkyl acrylate. Thus, the hydroxyalkyl acrylate of Selley is not directly bound to hydroxyl groups of a diene- α -olefin copolymer, but rather is bound through urethane linkages of an organic diisocyanate.

In contrast, the claimed invention is directed to a diene- α -olefin copolymer in which acrylic ester groups are found in at least a part of the ends of the copolymer which are **directly linked** to the diene monomer unit or α -olefin unit.



Applicants note, that the structure of formula (I) has the groups R¹ and R² directly bound to either diene or α -olefin monomer components of the copolymer. As the cited reference fails to disclose or suggest such linkage of acrylate ester groups to a diene- α -olefin copolymer, the claimed invention is clearly neither anticipated nor rendered obvious by the reference.

Applicants further note, that the hydroxyalkyl acrylates of Selley react with isocyanate groups through the hydroxyl group, the only reactive nucleophilic group of a hydroxyalkyl acrylate and accordingly the final structure of Selley is terminated with a terminal acrylic ester in which the ester group is not directly linked to the hydroxyl groups of a diene- α -olefin copolymer, but rather through a group R.

In contrast, the claimed invention is directed to a modified diene- α -olefin copolymer in which the acrylic ester group is directly linked through an ester linkage to the hydroxyl group of a diene- α -olefin copolymer.

As the cited references fails to disclose or suggest an ester linkage of the acrylate to hydroxyl groups of a diene- α -olefin copolymer, the claimed invention is clearly not rendered obvious from the reference and accordingly withdrawal of the objections under 35 U.S.C. § 102(b) is respectfully requested.

Applicants submit that this application is now in condition for allowance and an early notification of such action is earnestly solicited.

Respectfully submitted,

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